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# Soil and Water Conservation News

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## Comments:

### *From the SCS Chief*

## Experts Give Guidance to Our Soil and Water Conservation Programs

Last December, nearly 200 farmers, business people, conservationists, extension workers, and researchers gathered for a symposium just outside Washington, D.C. These specialists were called together to give us suggestions on how we can carry out the full intent of the Soil and Water Resources Conservation Act of 1977 (RCA).

We asked them to provide guidance for future agricultural policy . . . to help us figure out:

- Where agriculture may be in the next 50 years;
- Where natural resource conservation will fit;
- How to get more conservation on the ground; and
- How policy can be steered in the right direction.

As I said in my introductory address to the group, that's a tall order. But conferees rose to the occasion. What they have provided USDA is the sound thinking and advice that we can use to shape the RCA process, to give policy decisionmakers a balanced set of data, and to change USDA conservation programs for the better when the need is clear and the authority is in place.

As Richard Siegel, Deputy Assistant Secretary for Natural Resources and Environment, told the group, USDA soil conservation programs are going to operate in a new world and they're going to have to prove their mettle. The "old time religion" of soil conservation is going to be complemented by a tough, analytical, rigorous approach.

And we are going to need the kind of hard data and analysis that came out of the symposium to improve and support our resource conservation programs.



John R. Block  
Secretary of Agriculture

Peter C. Myers, Chief  
Soil Conservation Service

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## Symposium Held on Future Agricultural Technology and Resource Conservation

by Judith E. Ladd

In early December 1982, a group of nearly 200 agricultural research scientists, farmers, agricultural business people, extension workers, and other specialists met outside Washington, D.C., to participate in a symposium on Future Agricultural Technology and Resource Conservation. The experts were called together to review the current state of the water and land resource base and of the agricultural food and fiber production system and to gage where they might be headed during the next 50 years.

The U.S. Department of Agriculture (USDA) and the Center for Agricultural and Rural Development (CARD) at Iowa State University, Ames, planned the symposium so that experts could help USDA determine what future policies should be regarding the conservation of soil and water. Recommendations from the symposium will be used in meeting the requirements of the Soil and Water Resources Conservation Act of 1977 (RCA) and other USDA activities.

Peter C. Myers, chief of USDA's Soil Conservation Service, and Earl O. Heady, director of CARD, keynoted the symposium. Myers discussed the RCA process and objectives and outlined the purpose of the symposium. He told the group, "We are asking you for suggestions on how to carry out the full intent of the Soil and Water Resources Conservation Act of 1977; but in a larger sense, we are asking you to assess the direction agricultural policy should take in the future."

Heady presented "The Setting for Agricultural Production and Resource Use in the Future." He said that the extent to which agricultural lands will be eroded and water supplies will be depleted, or conserved, depends on a complex set

of variables. Some of the variables he cited were demand for agricultural commodities, technology available to agriculture, the adoption of soil and water conserving practices, conversion of land to nonagricultural uses, energy demand, the structure of agriculture, and the Nation's agricultural policies.

"This symposium has been called to analyze future possibilities in all of these facets of agricultural resource use," Heady said. "It is expected that the projections, deliberations, syntheses, and propositions forthcoming can provide inputs for the large-scale modeling efforts underway by SCS and CARD.

"We hope these interdisciplinary discussions among an outstanding group of scientists from all over the Nation can provide stimulation and imagination for all of us in the future," said Heady.

The symposium was organized into nine work groups, which included: Soil management technology, tillage, and crop rotation practices; land use; water resource technology and management; adoption and diffusion of soil and water conservation practices; crop technology; crop nutrition technology; pest management technology; machinery technology; and red meat, dairy, poultry, and fish.

Following the keynote addresses, speakers from each of the nine work groups set the stage for the working session to follow. The speakers discussed such topics as emerging technologies; agricultural trends; and plausible research, development, and implementation programs.

Finally, the work group members met to tackle the task of forecasting yields, recommending research projects and identifying technology needs, critiquing policies, and predicting trends. On the final day of the symposium, the work group moderators reported on their groups' findings and predictions.

Several of the work groups addressed the future of conservation tillage and no-till. The soil management technology group noted a need for improving soil/

seed contact in heavy, clayey soils and a need for improved equipment for precision placement of fertilizer and pesticide. The group identified the placement of fertilizer and pesticide as one of the most critical aspects of conservation tillage and no-till.

The crop technology group predicted that pure no-till is unlikely to become popular; however, group members expected conservation tillage to become increasingly popular and to contribute to increased productivity in the long run. The crop nutrition technology group predicted a 10- to 20-percent increase in fertilizer use under conservation tillage in the short run and little or no increase in the long run. Group members predicted that no-till would require more nitrogen initially than other conservation tillage practices. They agreed with the soil management technology group that fertilizer placement will be critical to the success of conservation tillage and no-till, and they indicated that ways to fertilize subsoils at lower costs may be needed.

The pesticide management group identified pest problems to be the same in conservation and conventional tillage. The group noted that the tools to control pests are available, but a major problem is in management, especially moisture and fertility. As far as pollution is concerned, more effective chemicals requiring much smaller application rates are being developed. This will result in less contamination; however, the group noted that the buildup of organic material will create a biosphere that can catalyze compounds faster. The group members expressed a concern about a long-term buildup of organisms capable of inactivating broad classes of pesticides, thereby requiring more of a compound under initial applications.

The machinery technology group is convinced that conservation tillage methods are here to stay, including strip tillage, ridge farming, and slot planting. Group members predict the use of ridge type planting will increase yields 5 percent by the year 2000 and 7 percent by 2030. Until now, machines have mainly

been adapted or altered for conservation purposes, but the group felt that equipment will be designed more and more specifically for conservation. The first area will be in secondary tillage equipment, especially for incorporating pesticides.

The land use group discussed issues influencing land conversion including marketing issues, legislative issues, and policy issues. Group members also came up with several data and analysis needs and some recommendations. They discussed the need for developing sound, technical solutions to what they called "the coming High Plains dust storms." The group predicted that without such solutions, "reactive political" solutions could be forced upon the Department of Agriculture that would not necessarily be the best solutions.

The water resource technology group stated that the United States has the potential for a water crisis over the next 50 years, which would probably be manifested in regional shortages and water quality problems, particularly ground water. The group felt that the real opportunity for agricultural water management is the highest in the eastern United States. They noted a need for basic research on the longrun effects of chemically assisted farming on water quality, especially ground water. They also noted a need to understand the mechanism by which nutrients and pesticides move through the soil and into aquifers.

The water group concluded that flooding remains a nationwide problem. They urged that USDA's commitment to the small watershed program be examined because the program offers opportunities for jointly addressing flood control, irrigation, water supply, drainage, and erosion.

The work group on adoption and diffusion said that too much emphasis has been placed on the individual and not enough has been placed on community factors. The work group members felt that technicians who work directly with landowners and users should have better training in salesmanship and inter-

personal relations. They noted a need for more information on the characteristics of tenant farmers and absentee landowners and a need for better data on the relationship between land tenure and erosion rates. They recommended an increased number of demonstration farms more widely spread throughout the country. They would like to see model leases developed which are tied to conservation plans.

The red meat, dairy, poultry, and fish group predicted that total per capita consumption of animal protein will not change, but there may be some shifting in kinds. The group predicted a 10- to 25-percent increase in production. The biggest projection was for catfish. It now takes 18 months to raise a 1-pound catfish to market weight. By 2000, it will take 12 months and by 2030 only 6 months. The group noted that genetic advances have outstripped nutritional ones. More research is needed on how to properly feed highly productive animals. Genetic engineering will involve not only animals but also the microbes that live symbiotically with them.

The nine work groups addressed many other issues and made additional forecasts of yields. An executive summary of the work group reports will be published this year followed by the symposium proceedings.

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**Judith E. Ladd,**  
editor, *Soil and Water Conservation News*,  
SCS, Washington, D.C.

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## RCA Update

The final soil and water conservation program that was developed under terms of the Soil and Water Resources Conservation Act of 1977 (RCA) has been sent to Congress. The new program sets national conservation priorities; targets U.S. Department of Agriculture (USDA) financial and technical assistance for conservation to critical resource problem areas; redirects USDA emphasis in research, education, and information to priority problems; involves local and State governments more fully in conservation programs; and improves the management of USDA's conservation programs. USDA has already taken several steps to implement the program.

On December 21, 1982, President Reagan announced his Administration's soil and water conservation policy and transmitted to the President of the Senate and Speaker of the House of Representatives a statement of that policy and the final RCA program report. In his policy statement, the President said that the program will "result in a significant improvement in the effectiveness of USDA conservation programs."

Copies of the report and copies of a summary of the program have been delivered to members of Congress, to the Governor of each State, to USDA and other Federal agencies involved in conservation, and to others. In addition, a copy of the program summary was sent to everyone who commented on the Secretary of Agriculture's "preferred" program during the second RCA public comment period, which ended in January 1982.

Information about the program and copies of both the program report and summary are available at each field office of the Soil Conservation Service and at each county office of the Agricultural Stabilization and Conservation Service.

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**James N. Benson,**  
writer-editor, Planning and Evaluation,  
SCS, Washington, D.C.

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# Land Evaluation and Site Assessment System Goes Nationwide

**T**he Soil Conservation Service, with the help of other USDA agencies, has introduced 49 States to a new but proven technique that takes some of the guesswork out of local farmland preservation decisions. Already, 39 States are using the technique, known as LESA (Agricultural Land Evaluation and Site Assessment).

SCS makes a county-by-county technical determination of the quality of each soil series for growing a particular crop and the costs and benefits of growing that crop on each soil, for the land evaluation part of LESA. Local planners do the site assessment, using a list of site characteristics, such as distance from urban areas, chosen by them from a list of suggested characteristics and weighted with their own point system. The point system is the same for all sites within a county. The planners combine the resulting score with the SCS land evaluation to rate the site's suitability for farmland. The most valuable, or highest rated, farmland can then be flagged for preservation.

Florida is leading the way in evaluating land for LESA. By mid-January, SCS in Florida will have evaluated 35 of its 67 counties, all of the counties that have completed soil surveys. SCS is waiting to evaluate 12 more counties that have begun soil surveys.

Florida's concern for preserving farmland increased after the National Agricultural Lands Study showed it was losing farmland at the rate of 340,000 acres each year. The farmland is lost because of the highest urban growth rate in the Nation. Its loss is all the more worrisome because of Florida's unusually favorable climate for growing crops.

Bob Groce, SCS resource conservationist in Florida, has been working full time with LESA since April 1982, shortly after SCS finished its testing of LESA in Florida and five other States.

Groce says LESA has been well accepted, and he has had an overwhelming response from planners. What's attractive about LESA to local planners,

Groce says, is that it offers them a way to justify decisions in the midst of competing pressures. The only problem he sees is with some of the rural counties in Florida that do not have urban planners to set up a LESA system.

USDA has found a tool that will help planners everywhere determine their best farmland. Anyone interested in more information about LESA should contact their State's SCS office.

**Donald L. Comis,**  
assistant editor, *Soil and Water Conservation News*, SCS, Washington, D.C.

## LESA: The Whitman County Experience

Whitman County, Wash., the largest county in the Palouse, was one of 12 counties chosen by the Soil Conservation Service to test the Agricultural Land Evaluation and Site Assessment (LESA) system last year. Whitman County consistently ranks as one of the highest producers of winter wheat among all U.S. counties, yet only 2.8 percent of the farmland is prime farmland.

In testing LESA, Whitman County planners found that the soil potential rating eliminates this inconsistency. The soil potential rating is the newest of four possible methods for evaluating land with LESA. The other three are: soil productivity, land capability classification, and the important farmlands rating system. The Soil Conservation Service recommends the soil potential rating as an alternative to soil productivity, in combination with the land capability classification and the important farmlands system. Since Whitman County has no Class I land, very little Class II land, and very little prime farmland, the preferred approach was modified by calculating the relative values directly from the soil potential indexes.

The soil potential index (SPI) for each soil unit is equal to the performance measure in dollars (P) minus the relative costs associated with corrective measures (CM) and continuing limitations (CL). For example, Palouse Silt Loam,

with a 7- to 25-percent slope, will yield about 70 bushels of winter wheat per acre in Whitman County. A price of \$4.25 per bushel results in a gross income of \$297.50 per acre (P). As a general rule, a 1,000-foot strip of grassed waterway is needed on each 100 acres of this soil unit. This would cost approximately \$36 per acre. Amortizing this for 10 years at 15 percent interest produces an annual cost of \$7.17 per acre (CM).

Estimating the tillage costs, and other costs such as conservation costs, gives a CL of \$165.61 per acre. In this case, the SPI is \$124.72. In a similar manner, an SPI is calculated for each soil unit. All of the SPI's are then arrayed from highest to lowest and converted to a 0 to 100 soil potential rating, with 100 being the best.

But net agricultural return is only one of many site attributes which may be considered by planners and land-use decisionmakers. Consequently, SCS has created the site assessment system to incorporate other attributes, such as distance to market, into the decisionmaking process.

The specific attributes which are included can vary from county to county. A score ranging from 0 to 10 is assigned for each attribute. For example, the greater the amount of farmland near the site, the closer the attribute score to 10.

In Whitman County, the attribute scores are summed to obtain an aggregate site assessment (SA) score, with 100 being the maximum value. Most of the other counties are weighing the attribute scores, based on the relative importance to the community.

Although the land evaluation (LE) and the SA can be used separately, they are most useful when combined. For each site, the acreage of each soil unit is multiplied by its soil potential rating. These products are summed over all soil units and the sum is divided by the total acreage of the site to get an average LE rating. The SA score is then doubled (giving it more importance in the combined system) and added to this average LE rating. In the counties where attribute scores are weighted, the weights are adjusted so that the maximum SA score is

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200. In either case, there is a maximum combined rating of 300.

If planners are looking at two alternative sites for a mobile home development, for example, they would choose the site with the lower total rating.

In addition to being useful for judging the agricultural suitability of alternative sites, the LESA system can also be used to help decide whether a single parcel should be converted to a nonfarm land use. Local decisionmakers would simply have to specify a maximum LESA total. Parcels with a LESA total above this maximum would be retained in agricultural use. Parcels with a LESA total below the maximum could be considered for conversion.

The soil potential ratings provide sufficient classes or gradations of farmland for local decisionmaking purposes, unlike the land classification and important farmlands systems which cover broad areas and are more suited to national needs.

Finally, the LESA system provides a consistent, technically defensible, and uniformly applicable approach to rating agricultural soils, which, nonetheless, is flexible enough to adequately reflect local conditions. Thus, the courts would probably not consider this approach to be "arbitrary and capricious." In fact, a similar system adopted in McHenry, Ill., has been upheld by the courts.

**Richard W. Dunford,**  
associate professor of agricultural economics,  
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**R. Dennis Roe,**  
district conservationist, SCS, Colfax, Wash.

**Frederick R. Steiner,**  
associate professor of landscape architecture and  
regional planning, Washington State University,  
Pullman, Wash.

**William R. Wagner,**  
formerly executive director, Whitman County Regional Planning Council; now director, Oregon District Four Council of Governments, Corvallis, Oreg.

**Lloyd E. Wright,**  
land use planner, Land Use, SCS,  
Washington, D.C.

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## SCS Tests Method to Track Farmland Conversion

The Soil Conservation Service in North Carolina is testing an inexpensive way to get quick, current information on the amount and rate of conversion of important farmlands. It will do this with the aerial color slides that USDA's Agricultural Stabilization and Conservation Service (ASCS) makes each year to check crop compliance, primarily for tobacco.

SCS chose Wake, Sampson, and Wilson Counties for the study. The agency chose Wake, where Raleigh is located, to represent rapidly urbanizing areas; Sampson to represent predominantly agricultural areas; and Wilson to represent areas with a balanced mixture. The study is being funded with a grant under the Soil and Water Resources Conservation Act of 1977, as part of a national effort to develop and test new ways to appraise natural resources.

SCS will project the ASCS slides, taken in the three counties last summer, onto aerial photographs of the 160-acre blocks of land used as samples for the 1982 Natural Resources Inventory (NRI). Areas of urban development found in the NRI are marked on the photographs. SCS will look for more recent urban development that will show on the color slides but not on the photographs. The agency will also measure the acreages converted and identify the type of farmland lost by looking at soil survey maps.

SCS will do this again in 1983 and 1984, each time shading in newly developed areas with a different color.

If the study works as expected, SCS will have found a very simple and inexpensive way to monitor annual conversion of farmland.

**Donald L. Comis,**  
assistant editor, *Soil and Water Conservation News*, SCS, Washington, D.C.

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## Grants for Conservation Tillage

Oswego County and Wayne County Soil and Water Conservation Districts in New York have each received \$80,000 Federal grants from the U.S. Environmental Protection Agency. Funds will be used to help promote conservation tillage in the districts through demonstrations. Both districts plan to purchase no-till equipment for use by farmers, and Wayne District will use part of its grant toward hiring a district employee to help the district carry out the demonstration projects.

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## Vegetative Row Barriers Reduce Wind Erosion

Reducing the need for emergency tillage or replanting while increasing cotton grade and production are some of the benefits of the new wind erosion control technique being used by Soil Conservation Service personnel in Texas.

Called vegetative row barriers, the system uses perennial grasses in strips across the field. One grass that appears to fit farming operations and reduce wind erosion in the Southern Great Plains is weeping lovegrass; it does not spread into adjoining crops and any normal tilling operation will destroy it. The grass does well on sandy soils and needs little moisture. During the winter months, it provides an effective wind barrier.

In April 1980, SCS personnel designed and helped plant 3 acres of lovegrass strips on Robert Melcher's 200-acre cotton field near Roaring Springs, Tex., under the Great Plains Conservation Program. The grass was planted with a broadcast seeder.

When Melcher planted his 1981 cotton crop, the grass strips were well established. As a result, he did not have to use a sandfighter on this field; normally, he would have had to use it three or more times.

He also estimated he had a 25 to 30 percent better quality of cotton and cleaner cotton at ginning time.

Melcher also increased his overall yield performance significantly against his nearby nonstripped field. The 3 acres of grass strips taken out of the 200-acre field was offset by the increased overall production of cotton.

Impressed by the benefits, Melcher planted the remaining 200 acres of his cotton field to grass strips in April 1982.

Last year, Melcher said these strips saved him from replanting his young cotton crop at least once, saving labor, time, and money. Melcher has also noticed an increased effectiveness of his herbicide programs and increased moisture saved in the soils. The best crop rows are growing next to the protective wind strips.

Melcher began the stripcropping practice on a terraced field, which has reduced terrace maintenance; he has extended it to nonterraced fields.

**Dale D. Allen,**  
public affairs specialist, SCS, Temple, Tex.

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## **No-Till Farmers Get a Head Start in Planting**

Soil Conservation Service District Conservationist Jim Wooten in Tarboro, N.C., reported that farmers planting no-till soybeans behind small grain got the jump over their burn-disk-conventional till neighbors in Edgecombe County last year. Frequent rains in June delayed the harvest of many fields, and the wetness hindered heavy tractors and disks in getting on the land. With a good supply of moisture in the ground, no-till beans were popping through the ground 2 to 3 days after planting while the conventional-till beans were still in the bag. Many acres of double-crop soybeans were not planted because wetness prevented the farmer from getting the soybeans planted on time. Not since the double-crop wheat-soybean boom began over the past few years has excess soil moisture been such a factor in delaying soybean planting.

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## **Good No-Till Corn Yields Under Center Pivot Irrigation**

A Burlington, Colo., farmer harvested 130 bushels of no-till corn last fall under center pivot irrigation. Vern Jacobsen planted two circles in standing corn stalks last spring with a Buffalo planter. He figures he saved \$1,000 per circle in reduced tillage costs. His yields, although down somewhat due to a wet year, are equal to yields of neighbors. He used 1½ pounds of Atrazine and 1½ pints of 2-4D and achieved excellent weed control.

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## **Contract Awarded to Operate Landsat Satellite**

A \$5.3 million, 1-year contract was awarded to the Computer Sciences Corporation, Silver Spring, Md., to provide support services for operating the Landsat 4 satellite system, the National Oceanic and Atmospheric Administration (NOAA) has announced. The contract contains an additional 3-year option for a 4-year total of approximately \$24.8 million.

The satellite, launched in July by the National Aeronautics and Space Administration (NASA) as part of a series of research satellites, is used to help forecast crop yields, manage rangelands and forests, aid in the exploration for minerals and petroleum, assess water quality, gauge the effects of natural disasters, plan land use, and perform many other services.

Computer Sciences Corporation will operate the satellite and schedule the use of the onboard high resolution mapping device and a multi-spectral scanner used to provide image data. The company also will provide data processing and customer services.

NOAA assumed responsibility for the satellite on January 31, 1983, when the satellite was transferred from NASA's research program.

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## **Idaho Landowners Eligible for State Cost-Sharing Program**

The Idaho Division of Environment has awarded the Canyon Soil Conservation District an \$878,000 State grant to reduce water pollution in the Conway Gulch drain, northwest of Caldwell. The drain empties into the Lower Boise River south of Notus. The grant comes from the Idaho Water Pollution Control Account, which is funded by tobacco and inheritance taxes.

The money will be used to share the cost of installing conservation practices on critical sediment-producing cropland within the Conway Drain watershed. Approximately 180 farms covering 13,000 acres will be eligible for cost-share funding through this program.

The program will be administered by the Canyon Soil Conservation District with technical assistance from the Soil Conservation Service. Landowners who desire to participate in the program will submit an application to the district. The district will then assist the landowner in developing a water quality plan identifying those conservation practices which will, when applied, reduce the amount of sediment and other agricultural wastes which eventually enter the Conway drain. A contract will then be developed identifying which practices will be cost shared, the percentage of cost sharing, and a time schedule for applying the practices. The contract will cover a period of from 5 to 10 years depending on how long the landowner needs to complete the work. The percentage of cost sharing will vary from 40 to 75 percent depending on the practice.

The State Cost-Share Program for residential and industrial wastes has been in effect for many years but last year was the first time funds were made available for agricultural waste control.

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## **Forest Service Trades for Mount Saint Helens Land**

The U.S. Department of Agriculture's Forest Service and Weyerhaeuser Co. formally exchanged deeds on thousands of acres last November, culminating a land exchange required by the act creating the Mount Saint Helens National Volcanic Monument.

The Forest Service traded 4,756 acres of heavily forested land to Weyerhaeuser in exchange for 16,895 acres in the area north and west of Spirit Lake that was devastated by the May 18, 1980, eruption of the volcano.

Forest Service officials are presently working on land exchanges with other private owners of lands within the monument boundary.

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## **New Conservation Farmer Award Program Announced**

The National Endowment for Soil and Water Conservation has announced its National Conservation Farmer Award Program. The purpose of the award program is to give recognition to individual farmers throughout the country for their actions in soil and water resource management.

"We are starting this awards program to increase the public's awareness of the tremendous contribution made to resource conservation by the country's farmers," said Emmett Barker, chairman of the Endowment's Provisional Board of Governors, "and to create a climate that encourages the exchange of new soil and water conservation ideas at the local level."

Conservation and farm organizations and commodity groups are invited to work together to select their State's nominee to compete in the national program. According to Barker, eligibility is limited to farmers who derive a substantial portion of their income from an agricultural enterprise.

"This new awards program is designed to reward effective application of relatively inexpensive yet innovative conservation techniques," said Barker, "which fall within one or more of the following categories: soil resource management, water resource management, and pollution impact management."

For more information, write to the National Endowment for Soil and Water Conservation, 318 Fourth Street, N.E., Washington, D.C. 20002.

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## **European Environmental Internships Available**

The German Marshall Fund in cooperation with the Institute for European Environmental Policy is offering short-term internships for American environmentalists interested in gaining firsthand knowledge of selected environmental policies of European countries. Interns will spend up to 2 months in two or three European countries, under the guidance of the Institute's Bonn staff, and in its London or Paris office. They will examine specific issues of environmental policy-making which are of direct relevance to their work in the United States. Up to five internships will be awarded during 1983/84.

The European Environmental Internship Program is open to qualified individuals engaged full time in environmentally oriented activities under the auspices of a public, private, or nonprofit institution concerned with environmental issues. Applicants must have had professional training and experience in one or more of the following environmental issue areas: toxic substances control policies and hazardous waste management; water resources management; or soil protection.

For application information contact Marianne Lais Ginsburg, The German Marshall Fund of the United States, 11 Dupont Circle, N.W., Suite 900, Washington, D.C. 20036, or telephone (202) 745-3950. Deadline for applications is May 1, 1983.

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## **National Agriculture Legal Fund Formed**

A new national group to fund litigation on behalf of agricultural interests was recently formed: the National Agriculture Legal Fund, Inc. According to the group's president, James Barron, III, a Texas cattle rancher, the purpose of the organization is to raise funds to support any court suits "as appear warranted in order to preserve the environment in which agriculture can produce and maintain adequate supplies of food and fiber" for consumers in the United States and throughout the world.

Barron said that the Washington, D.C.-based group would not be involved in legislative lobbying or in political activities. "We have two goals: to inform the general public of the importance of agriculture and to get involved in important legal cases in which continued production of food and fiber is an important issue.

"Agricultural producers value public interest goals such as protecting the environment, perhaps more than most, given our dependence on natural resources," Barron said. "However, today we are faced with the need to correct an imbalance which has occurred in the past decade due to regulatory decisions lacking scientific justification. Our goal is to restore an environment in which agriculture can profitably produce and maintain adequate supplies of food and fiber to meet the consumptive needs of the public."

Besides funding court suits and contracting for legal assistance, the fund plans to publish information on the costs and benefits of regulations, to sponsor public forums on critical issues, and disseminate reports on the condition of agriculture in the United States.

The address of the National Agriculture Legal Fund, Inc., is 425 13th Street, N.W., Suite 1032, Washington, D.C. 20004.

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# New Publications

## Advances in Irrigation

Edited by Daniel Hillel

This 302-page book is the first volume in a new serial publication published by Academic Press. It is designed to be a forum of information between the highly technical journals and the very general textbooks on irrigation.

The seven chapters include information on conjunctive use of rainfall and irrigation in semiarid regions; irrigation scheduling using soil moisture measurements; canopy temperature and crop water stress; use of solute transport models to estimate salt balance below irrigated cropland; level-basin irrigation; flow measurement flumes; and principles, practices, and potentialities of trickle irrigation. Each chapter is written by an expert or team of experts in that particular field.

Many graphs, maps, and photographs are used to illustrate the authors' information.

This book is available for \$37.50 from Academic Press, Inc., 111 Fifth Avenue, New York, N.Y. 10003.

## Impacts of Emerging Agricultural Trends on Fish and Wildlife Habitat

by the Board on Agriculture and Renewable Resources, Commission on Natural Resources, National Research Council

This is the report of a National Research Council committee's study for the Soil Conservation Service and the U.S. Department of the Interior's Fish and Wildlife Service. The committee identifies agricultural trends in

Chapters 2 through 5, and analyzes the effects of these trends on cropland and pastureland, forest, rangeland, lakes and streams, interior wetlands, and coastal wetlands and estuaries, respectively, in Chapters 6 through 11. The authors list research needs for each of these habitats. In Chapter 5, they discuss trends in management practices such as the increased use of conservation tillage on cropland.

This report is available for \$12.95, prepaid, from the National Academy Press, 2101 Constitution Avenue N.W., Washington, D.C. 20418. Make check or money order payable to the National Academy of Sciences. (Order No. 32830.)

## Food—From Farm to Table

by the U.S. Department of Agriculture

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The hardbook has 32 pages of color photos, and over 90 black and white photos. There are 44 chapters, many of a "how-to-do-it" nature for farmers and consumers.

A copy of the book may be purchased by sending a check or money order for \$12 to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.